Chapter 9

China's Evolving Labor Market[1]

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1. Introduction

In the nearly three decades since the inception of reforms, the structure of China's labor force has been fundamentally transformed. In 1978, an overwhelming majority of the labor force was either employed as agricultural workers in rural communes or as employees in urban state-owned enterprises (SOE), with virtually no labor flows between the rural and urban sectors. By 2004, however, over a third of the rural labor force had moved into nonfarm activities (see Table 1), and about three-quarters of the urban labor force had found employment outside of the state sector, in urban collectives, joint ventures and private enterprises (see Table 2). Today, there are more than 100 million rural migrants working temporarily in cities, establishing a direct connection between the rural and urban labor markets.

[Table 1 about here]

[Table 2 about here]

Prior to reform, job changes were either prohibited or controlled by appropriate government agencies. The fundamental shifts in the distribution of employment across sectors and ownership categories that have occurred under reform require an allocative mechanism far more flexible and sensitive than nations have ever achieved with administrative controls. The emergence of a functioning labor market has been essential to this transformation, and this is recognized by the Government. A series of reform policies and deregulations have been instrumental in the emergence of labor markets in China, but due to the incomplete nature of reform, some existing policies and institutions still prevent the labor market from efficient

operation. The uneven institutional evolution of labor markets and their regulation have profound social and political consequences. Dealing with this labor-market transformation is one of the most challenging tasks facing the Government and the Chinese Communist Party, and the way in which laws, regulations, and institutions evolve under this challenge raise a series of questions of great academic and policy interest. The goal of our paper is to address some of these questions and to discuss and evaluate the ways in which answers are evolving.

We address two questions raised by China's ongoing economic reforms in the context of the labor force and labor markets: (1) What are the implications of economic reform in general for labor-market institutions? and (2) What are the current conditions of the labor markets and what are the major challenges for further reform? In dealing with these questions, we treat the progress of economic reform to date and analyze how marketization of the Chinese economy has led to the need for radical changes in labor-market laws and regulations. Most importantly, we examine the applications of these laws and regulations and their implications for the allocation of labor. Our analysis will also reveal persistent labor-market problems and discuss the policy choices facing China's policymakers today.

Our treatment divides the discussion between rural and urban labor markets. The reason for this division lies in a fundamental characteristic of the Chinese economy under planning, namely, the formal segregation of the rural (agriculture-centered) and urban (manufacturing-centered) economies and labor forces. These two sectors were treated as critically related but separate entities during the entire period of central planning, starting in 1949, and this segregation remains at the center of Chinese labor-market problems and policies today, even as the two sectors are connected

forcefully by the potential gains from trade and the major factor-market disequilibria between them[2]. Because basic economic forces are thwarted by segregation, major problems of incentives, mobility, wage differences, and social policy persist. The division between state/non-state ownership sectors, social security (including medical coverage and pensions) and unemployment (including unemployment insurance), and related topics of housing, education, and other social services are all related to drastically different policies and social problems that distinguish China's rural and urban economies.

In our discussion we measure the achievements of reform to date, as well as the need for further reform, with the metrics associated with economic efficiency and productivity. An irony worth noting is that this metric is based in part on formal analysis supporting the viability of government ownership under socialism (Lange and Taylor, 1966), and a major contributor to the reform movement has been the failure of both policy and practice to approach the frontier of efficiency and productivity in China. We treat the institutional factors underlying successes and failures of reform and we pay particular attention to policy issues, including the sequencing of reforms (e.g. provision of social security and implementation of labor contracts); coordination among various reforms (rural land arrangements and labor mobility, housing reforms and labor mobility); the political economy of reform (e.g. efficiency and protection of state-owned enterprises -- SOEs); and other topics related to the conflicts and congruence of political and economic objectives.

In describing and analyzing China's labor-market reform it is essential to distinguish between laws and regulations as they are written ('on the books') and how they are applied (Ohnesorge, 2003). Evolution from a planned economy to freely operating markets involves governments

at all levels relinquishing controls that they have long exercised, and governments reasonably fear the loss of political power and authority in so doing (Clarke, 2003). Nowhere is this connection between a move to free markets and loss of political power more closely related than in labor markets.

2. Rural Labor Markets

The segmentation of China's rural and urban labor markets can be traced to the heavy-industry-oriented development strategy pursued vigorously in the period of central planning.[3] The main mechanisms for enforcing this strategy consisted of the unified procurement and sale of agricultural commodities, the people's communes, and the household registration *(hukou)* system that designated the legal place of residency and work for the entire population. This development strategy resulted in massive distortions in the factor markets with excessive concentrations of capital in urban areas and of labor in rural areas. Prior to the reform in 1978, urban workers' productivity and earnings far exceeded those of their rural counterparts.

Within rural regions, the labor force was governed under the people's communes, which received production targets from the planning authorities and delivered procurements at state-dictated low prices. Ever since the tragic experience of the Great Leap famine of 1959-61, which resulted in 20 to 30 million excess deaths, national policies stressed agricultural production and local grain self-sufficiency. Rural industries were underdeveloped and remained subsidiary to agriculture (Findlay et al., 1994; Naughton, 1996). Thus from a labor-market perspective, there were two sets of problems with central planning on the eve of economic reform in 1978: (1) the pervasive labor-incentive problems due to the organization of work within communes; and (2) the severe misallocation of labor

between rural and urban sectors, as well as between agricultural and nonagricultural activities within rural regions.

2.1 Reforms in Local Markets

Market-oriented development in rural China started with a package of three reforms: the replacement of production teams with households as basic production units (household responsibility system [HRS]); official increases in agricultural product prices; and the liberalization of markets for rural products. These reforms provided the necessary conditions for the boom in rural industries starting in the mid-1980s and were instrumental in the emergence of labor markets in rural China.

The change from communes to a household-based farming system began in 1979 in Anhui province and was essentially completed nationwide by 1983. This institutional change, which introduced marginal compensation for family work effort, solved the labor-incentive problems in the communes and resulted in dramatic increases in labor productivity and earnings. Consequently, the demand for workers declined on small Chinese farms. In the same period, the Government initiated planning reforms in which the state reduced the number of production targets (or categories). Of the remaining targets, few were mandatory and many were guided by complementary prices and incentive schemes (Sicular, 1988). Because the HRS increased families' command over their productive resources, including labor, farmers not only had incentives but also some freedom in seeking nonfarm employment.

In 1979, the government also implemented large increases in state procurement prices for agricultural products, with a weighted increase in quota and above-quota prices of 22.1 percent.[4] As a result, large amounts of funds were injected into the rural economy, creating demand for industrial products and funds for capital investment, especially in nonfarm production.

Concurrently, the opening of rural markets not only accommodated the sale of nonfarm products, but also facilitated the purchase of inputs for rural industries. Clearly, the three reforms were interrelated: each reinforced the impact of the others on the development of labor markets.

Hence, by the mid-1980s, the conditions for accelerated employment growth in China's rural industries were in place. Input and output markets had emerged, households were conscious of their alternative opportunities, and they had incentive to seek employment in the nonfarm sector with higher earnings. There is little question that marginal productivity of labor in rural industries exceeded the levels in the cropping sector, indicating overallocation of labor to agriculture (Putterman 1993; Yang, 2004).

[Table 3 about here]

Table 3 summaries a series of government deregulations in the 1980s that became the catalyst for rapid expansion of rural enterprises. These well-coordinated policies reduced farmers' obligations in agriculture and loosened restrictions on labor mobility, prompting farm families to adjust their activities in accordance with relative profit margins. In 1985, grain-sown area at the national level fell by 4 percent, output by 7 percent, cotton-sown area by 26 percent, and cotton output by 34 percent (Sicular, 1988). In contrast, the number of township and village enterprises (TVEs) more than doubled in the same year, and their total labor force increased by 36.5 percent, following a year of strong growth in 1984 (see Table 1). These dramatic changes in policies and in farmers' responses marked the beginning of the sustained expansion in nonagricultural activities.

Indeed, the fundamental changes in the distribution of labor force shown in Table 1 have been the main feature of the rural labor market in China since the inception of reform (see, for example, de Brauw et al.,

2002). Between 1978 and 2004, the rural labor force grew by 1.8 percent per annum, from 306.4 to 487.2 millions. However, the workers in rural nonagricultural activities increased by about 8.5 percent per annum, from 21.8 to 181.2 millions. Table 1 also shows how the incremental rural labor supply was absorbed during the entire period. The remarkable statistic is that approximately 88 percent of the increment found employment in the nonagricultural sector, with a majority finding jobs in TVEs. Empirical evidence shows that for 1986-1995, the rapid expansion of nonfarm activities contributed 43.6 percent of the total income growth of farm households for a large sample from Sichuan province (Yang 2004).

Rural labor movements are not restricted to local jobs. In fact, rural-to-rural mobility, defined as employment of workers' in rural villages other than their home villages, represents a rapidly growing component of the rural work force in recent years. According to the study by Lohmar and Rozelle (2001) based on a nationally representative survey of 215 villages, rural-to-rural migrant workers accounted for one percent of the rural labor force in 1988 (about 2 million), but grew quickly to 5 percent in 1995 (about 12.9 million). In 1995, the proportion of workers from other villages accounted for 62 percent in rural private enterprises and 46 percent of collective enterprises. Moreover, incoming labor from other villages did not negatively affect the nonfarm employment opportunities of local residents or the wages they receive.

2.2 Rural-Urban Migration

The pursuit of the heavy-industry-oriented development strategy in the pre-reform era caused severe segmentation between the rural and urban sectors in China. The results were massive distortions in the factor markets with an excessive concentration of capital in urban areas and of labor in rural areas.[5] Accordingly, on the eve of economic reform in 1978, the

urban-rural per capita income ratio reached 3.4 (see Table 4). The pressure for rural-urban migration was magnified by rural reform that reduced the demand for farm workers, and it could not be offset, even though it was ameliorated, by the burgeoning TVE sector. When rural reform abolished the communes in 1985 and reduced the role of central planning in agricultural production and sales, *hukou* became the most important legal barrier to rural-urban migration.

[Table 4 about here]

China has used a household registration system for tax collection and social control purposes for over 2,000 years, but its current importance stems from its formal adoption by the Chinese government in 1958, with the issuing of *Regulations on Household Registration of the PRC*. According to the regulation, *hukou* designates a person's legal place of residence and work at the time of his or her birth based as the locality of the mother's registration (Chan and Zhang, 1999). Possession of the appropriate *hukou* (e.g. agricultural versus nonagricultural) also determines one's access to various amenities and social services such as health care, schooling, and until recently, rationed or subsidized food products, which were provided only to urban residents. Therefore, although rural workers had strong incentives to seek employment opportunities with better pay in cities, they had to overcome legal barriers to working in cities.

Because of the inefficiency and pressure for illegal migration associated with labor misallocation, the *hukou* system has been modified to permit more flexibility in reallocation of labor between rural and urban markets. The first major modification occurred in 1988, when the central government initiated a major policy reform that relaxed the controls over rural-urban migration -- farmers were permitted to work and to carry on business in cities provided they could secure their own staples (Forbes and

Linge, 1990). This regulation gave new opportunities for rural workers to work temporarily in cities, representing improvements over the old system in which college education--and not even marriage--provided the only legitimate access to urban registration (Chan and Zhang, 1999).

In the early 1990s, the end of food rationing made easier for for temporary rural migrants to live in cities because they no longer had to bring food with them from the countryside. They could purchase food directly without securing ration coupons. In 1998, the Ministry of Public Security issued another regulation loosening the control of *hukou* registration – those who moved to join their parents, spouses, and children in cities could also receive urban registration (Cai, 2003).

At of today, *hukou* reform remains incomplete and its progress varies across provinces and even cities. In general, local situations fall into one of three models (Cai, 2003): (1) in over 20,000 small towns, applicants may receive local registration if they have a permanent source of living and housing in the locality; (2) in many medium-size cities, including a few provincial capitals, requirements for gaining *hukou* status have been significantly reduced, some just requiring a long-term work contract; and (3) in few megacities such as Beijing and Shanghai, obtaining *hukou* remains very difficult. Although the loss of the power to grant or withdraw *hukou* registration may be deemed a threat to the incumbent government's political power, popular pressure to relax *hukou* restrictions work in the opposite direction. In late 2005, the government announced an experimental plan for 11 provinces in which local governments would allow peasants to register, and have the same rights to social benenfits, as urban residents (Kahn, 2005). Another way in which urban-rural segmentation has diminished has been the expansion of existing cities into the surrounding countryside, serving to absorb agricultural surplus labor, and

also the emergence of urban agglomerations, such as Shenzhen, from what had been countryside (French, 2004).

When restrictions on rural-urban migration were gradually lifted, the rural labor force responded to economic incentives by seeking employment in urban areas. The majority of rural workers who work temporarily in cities do not have the correct household registration or *hukou* status, and they are called the 'floating population.' Estimates of the size of the 'floating population' over the years vary with definitions based on length of temporary residence and geographic boundaries (across-townships or counties) (Cai, 2003). A research team at the Ministry of Agriculture (MOA, 2001) reported a summary of estimates based on their findings as well as survey results from the National Bureau of Statistics (NBS) and the Ministry of Labor and Social Security (MOLSS). In 1983, the total floating population was approximately 2 million. For the period between 1997 and 2000, the annual estimates for across-township migrants of whom the overwhelming majority were laborers were 38.9 million, 49.4 million, 52.0 million, and 61.4 million. Another independent survey by the MOA puts the estimate at 75.5 million for 2000. Based the 2000 census, Cai (2003) offered an estimates of 77 million rural-to-urban migrants for that year. An important message from these results is that the floating population is a significant component of China's labor force. In 2000, it accounted for about 11 percent of the total labor force in China.

Given the severe distortions at the inception of reform, the subsequent labor movements from the low productivity sector (agriculture) to the higher productivity sector (nonagricultural) became a major source of economic growth in China in the post-reform period. The estimates by the World Bank (1997) suggest that labor mobility contributed 1.5 percentage points to the annual GDP growth rate of 9.4 percent over the period 1978 to

1995; that is, 16 percent of the GDP growth of that period. This result is corroborated by Cai and Wang (1999) who concluded that labor reallocations, including labor transfers among regions, have accounted for 21 percent of annual GDP growth in the post-reform years.

2.3 Evidence of Remaining Distortions and Fragmentation

(a) Problems within Rural Markets

Although substantial progress has been made in the development of a functioning rural labor market and farm families have enjoyed sustained income growth from diversified sources, several studies present evidence on continued distortions and market fragmentation. One puzzling observation based on available data is a persistent and widening wage gap between rural agricultural and nonagricultural sectors. Based on information from SSB on the national average wage of TVE workers and estimated earnings per agricultural worker, Meng (2000) presents the wage gap for the period 1984-1994. Inconsistent with the narrowing of the differences, the wage ratio of TVE workers to agricultural laborers actually increased from 1.52 in the beginning of the period to 1.94 at the end of the period. The existence of a wage gap may have resulted from multiple factors, such as differences in worker quality across the two sectors and higher costs of living and transportation costs accompanying employment in TVEs. But the widening gap is puzzling, suggesting the influence of significant institutional barriers to labor mobility.

Estimates of MPL between the agricultural and nonagricultural sectors corroborate the above evidence on wages. Using a production function approach, Wang (1997) estimated the MPL for agricultural and nonagricultural sectors, where the nonagricultural sector includes both TVEs and other types of rural industrial enterprises. The gap fell slightly during the period 1980-88 from a ratio of 2.55 in 1980 to 2.29 in 1988, but

it started to widen again in 1989, reaching 3.68 in 1992. For the period 1987-92 using provincial level data, Yang and Zhou (1999) also found an increasing gap in agricultural and nonagricultural MPL, reaching 2.01 in 1992.

Gaps in wages and labor productivity across the sectors present indirect evidence of market imperfections in rural China, and direct tests corroborate these conclusions. In the analysis of the household, the separability result states that if factor markets are competitive, the labor actually used in production would be independent of the household size and composition (Bowles and Sicular, 2003). If the independence condition is rejected empirically, it implies non-competitive factor markets. A study by Bowles and Sicular, using panel data covering the years 1990-93 in Shangdong province, rejects the null hypothesis that family labor demand and supply are separable. They conclude that despite considerable progress in market reforms, in early 1990s rural households in China still faced difficulties transferring labor and land optimally given their household size and composition. In a separate study, using 1994 data from Zhejiang province, Yao (1999) studies wage determination in TVEs and also tests the existence of competitive labor markets. His empirical analysis strongly rejects the competitive hypothesis, suggesting significant administrative controls on wages and employment.

(b) The Two-Tier Labor Markets

Micro empirical analysis has also shown that rural migrants in cities do not receive competitive job and wage offers. Meng and Zhang (2001) conducted a careful study of occupational segregation and wage differentials between urban residents and rural migrants in Shanghai based on two survey data sets containing individual information. They find that rural migrants are treated differently from their urban counterparts in terms

of occupational attainment and wages, after controlling for productivity-related characteristics, such as education, gender, and work experience. With regard to occupational attainment, they show that around 22 percent of urban residents who would have been better suited for blue-collar jobs were given white-collar employment, while 6 percent of rural migrants who would have been suitable for white-collar jobs were relegated to blue-collar positions.[6] City residents also enjoyed a large wage premium. Lu and Song (2006) find similar evidence of *hukou*-based discrimination against rural migrants to Tianjin, based on a 2003 survey.

Urban residents as well as state and local governments are largely responsible for the existing situation. As Zhao (2000) points out, 'as urbanites enjoyed more and more government subsidies, better protection, and higher incomes, they also came to believe themselves as being superior to rural people. This became the historical and psychological basis for the discrimination toward rural people.' Arising from these prejudices and institutional factors, the segregation in the urban labor market causes losses of aggregate output and also worsens the economic position of those who are already poor, which in turn may contribute to social instability.

(c) Rural-Urban Income Differences

Under efficient conditions, earnings for comparable labor across rural and urban areas should be about the same, corresponding to the equalization of marginal labor products across sectors. A key word, of course, is comparability. Rural and urban workers vary in many characteristics, not all observable, so that equality of wages across sectors is unlikely to be achieved in fact or even to be desirable from an efficiency perspective. In China, however, the ratio of urban to rural per capita income is very large indeed, considerably greater than in other developing

and transitional economies. We believe that this results from severe barriers to efficient labor flows.

Table 4 presents urban and rural per capita total incomes and their ratios for the period 1978-1997. The primary data sources are from the Rural and Urban Household Survey collected by China's National Bureau of Statistics with adjustments for (1) information on urban non-wage earnings, including provisions such as housing, health services, in-kind transfers, and various price subsidies, and (2) sector-specific inflation.[7] The earnings in urban areas have been about two to three times higher than the level in rural areas. The urban-rural ratio declined sharply as rural incomes responded to the spread of the Household Responsibility System after 1978 but tended to drift upward between 1985 and 1995 before beginning to decline slowly.[8]

Government policies that push for speedy industrialization by discriminating against agriculture may lead to rural-urban income disparity in developing countries. What should concern scholars and policy makers is the magnitude of the gap in China. Yang and Cai (2003) presents the ratio of nonagricultural to agricultural incomes for a standard worker across 36 countries. The ratios for the majority of the countries are below 1.5, contrasting sharply with the range for China, which generally fluctuates between 2 and 3. More specifically, in 1985, there were only four countries for which average urban earnings were more than twice average rural earnings. There were five countries in 1990 and three countries in 1995 that had ratios of 2 or more. Moreover, the countries with the ratio exceeding 3 were the poorest countries in the world, where market distortions were pervasive. They report that the ratio of nonagricultural to agricultural income in several Eastern European countries in 1995 varied between 1.19 in Poland to 2.01 in Bulgaria, the only country that approached the urban-

rural income ratio in China in 1995.

There is evidence that barriers to migration diminished after the mid-1990s. As Poncet (2003b) reports, a major barrier to the integration of China's labor markets occurs at provincial borders. Her investigation on rural-urban migration flows use panel data on movement both within and between provinces extracted from the population censuses of 1990 and 1995. These data permit analysis of migration flows during two periods: 1985-90 and 1990-95. She estimates the 'border effects,' which is the additional cost of migration associated with crossing provincial borders. The study indicates substantial border effects that on average reduce interprovincial migration to less than 10% of what it would have been, given the effect of distance-related and other costs of rural-urban migration. The decline in interprovincial border barriers for the two periods, 1985-90 and 1990-95, helped reduce rural-urban income disparity.

Nevertheless, recent information indicates that China's rural-urban income divide is persistent. Sicular et al. (forthcoming) finds that in the year 2002, the mean household disposable per capita income differential was approximately 2.27 expressed as an urban/rural ratio; this is a measure that adjusts for spatial differences in the cost of living across regions. Although caution is required in making cross-country comparisons, these figures suggest that the fragmentation of China's rural-urban markets has been very serious indeed. Liu (2006) demonstrates that even when rural migrants manage to obtain an urban *hukou* direct and indirect effects persist, because the rural migrants still are affected by their lack of schooling and, equally serious, their lower return to schooling than that enjoyed by long-time urban *hukou* holders.

Despite the large absolute number of migrants in China, interregional movement is much smaller than might be expected in

comparison to what it would be if relocation were unrestricted by existing legal and economic barriers. As Johnson (2003) reports, interprovincial migration in China between the 1990 and 2000 census was about one-fourth the magnitude of interstate migration in the United States. Given the immense regional labor-market disequilibrium that characterize today's China, a more telling benchmark is the United States during its period of greatest rural-urban population relocation, which was ten times the magnitude of China's migration flows today, relative to population.

Before going further, we address a possible objection to our focus on labor flows, namely, that capital flows are a substitute for human migration. In a perfectly homogeneous environment with no fixed geographical factors or agglomeration economies or diseconomies, equality of marginal products could be achieved by appropriate movement of either labor or capital. Moreover, it is well-known that in the classic Heckscher-Ohlin framework, interregional trade would substitute for interregional migration in equalizing marginal products. Poncet (2003b) considers this possibility for China and finds that the conditions under which migration and trade would substitute for each other do not hold. Indeed, Poncet finds that migration and trade are complementary and reducing interregional barriers to trade within China increase, rather than reduce, the potential gains from freer labor migration. In a related study, Au and Henderson (2002) model and estimate urban agglomeration economies in a production-function framework for 206 cities in China. Their estimates yield a familiar ∩-shaped relationship between city size and productivity, with the left-hand side being much steeper than the right-hand side. They find that barriers against migration to China's urban areas have resulted in a much higher proportion of cities being undersized, resulting in substantial productivity

losses. The importance of 'under-urbanization' for rural-urban income gaps in China is confirmed in Chang and Brada (2006).

(d) Rural-Urban Productivity Differences

While income differences are indicators of the relative economic welfare of rural and urban residents, they may not accurately reflect the efficiency of resource allocation when wages are not determined through competitive mechanisms. Then, direct measurements of labor productivity are necessary. This is probably the case in China, so labor productivity estimates are needed to provide direct information on the sectoral misallocation of labor.

Several studies have found that the marginal productivity of labor (MPL) in state industries far exceeds the level in rural industries, and that the latter also far exceeds the level in agriculture. Yang and Zhou (1999) presents estimates of MPL for the three sectors using Chinese provincial data for the period between 1987 and 1992. They show that within this time period, the MPL in state industries was about 15 to 16 times of that in agriculture, and the MPL in rural industries was about 25 to 100 percent higher than in agriculture. These results are corroborated by other studies using more recent data. For instance, based on data covering the period 1987-1998, Cai et al. (2002) present evidence that the ratio of agricultural labor productivity to industrial productivity range from 12 to 17 percent across the eastern, central and western regions in 1998. The productivity differences across the sectors are very large indeed.[9]

The evidence of large productivity differences across the sectors implies the existence of seriously fragmented factor in China. Consequently, as the model implies, if labor was reallocated from the low marginal productivity areas to the high marginal productivity areas, there would be gains in aggregate output without utilizing additional resources.

A relevant policy question is: if more labor is transferred from agriculture to rural and state industries, how much would output increase?[10]

We have conducted a policy experiment based on partial equilibrium analysis of reallocating 1, 5, and 10 percent of the agricultural labor force to rural and state industries, with an equal percentage split of the total allocated to the two destination sectors. Each sector is given its own production function: rural and state industries use labor, capital and intermediate factors as inputs, while agriculture uses labor, land and machinery with weather also affecting its production. The production structures and parameter values are taken directly from the estimates made by Yang and Zhou (1999) and corresponding variable values for the Chinese provinces in 1992 are used in the policy experiment.[11] The policy experiment shows that improvements in the allocation of labor based on their productivity across sectors would realize substantial output gains. When labor leaves agriculture, output in that sector will fall, but by much less than the output in rural and state industries will increase. Thus, the experiments based on three hypothetical percentages of labor transfers would result in 0.66, 3.09, and 5.82 percent gains in aggregate output -- substantial indeed. These results are supported in an independent study by Zhang and Tan (2003). In their framework consisting of four sectors (agriculture, urban industry, urban service, and rural nonfarm production), the transfer of 1, 5, and 10 percent of labor out of agriculture and reallocating them to the other industries would result in 0.7, 3.3, and 6.4 percentage increases in the aggregate output. In a recent, unpublished paper, Fleisher, Li, and Zhao (2006) show that if labor were reallocated among provinces to equate MPL in all provinces in the year 2003, per capita GDP would have increased approximately 7 percent.

However, these results do not necessarily imply that output gains can be realized instantly from labor reallocation, especially when there is unemployment and underemployment in the urban/state sector. Soft urban demand conditions for rural workers may affect the timing of realizing potential output gains. Moreover, our aggregate partial equilibrium analysis does not provide insights into the micro-level management of the urban/state sector. The ownership structure of urban enterprises, their incentive mechanisms, the substitutability of productive factors and the training of new employees all affect the capacity to absorb rural workers. The provision of city infrastructure could be another potential constraint.

2.4 Institutional Barriers and Policy Challenges

Despite major improvements in the institutional and policy environment, there still exist serious barriers to an efficient operation of labor markets in rural China. Although land rental markets have begun to emerge (e.g., Kung, 2002), under the HRS farm families have land-use rights but not rights of alienation. If they permanently leave agriculture, farmers must return the land to local authorities and consequently give up a stream of potential land earnings in the future (Yang, 1997). This pecuniary cost reduces labor mobility, as it raises the expected future wages that rural families require from their prospective destination when moving away from agriculture. As a result, Chinese farmers have less incentive to engage in family migration and are more willing to split family labor supply between farm and nonfarm employment. This division of time is a second-best solution under the existing land arrangements that takes advantage of higher nonagricultural wages and avoids the loss in land values, as Yang (1997) argues. This is a factor that creates differential rural-urban labor earnings, as well as a wage-productivity gap between farming and nonfarming sectors, as documented earlier.

Moreover, China's farmland arrangements under the HRS obligate the farm household to deliver a part of its grain output to the state at quantities and prices specified by the government. Although there exist other land tenure systems, an overwhelming majority of the rural households have responsibility land (e.g., Brandt et al., 2002). When rental markets are restricted, the obligation of delivering procurement quota would reduce the flexibility of family labor allocation to alternative employment. In particular, the grain quota policies could create a wage gap between rural agricultural and nonagricultural sectors, as section 4.1 points out. Hence, further reforms in grain procurement systems and the property rights of rural land are needed.

Local protection is also a significant issue. For instance, a rural worker currently employed in the enterprise of another village does not receive an allocation of homestead or other housing arrangements, even if the job is permanent, thus imposing high costs on the migrants. In addition, workers from a village often earn much higher wages than outsiders after controlling for productivity-related characteristics (Yao, 1999). Serious segmentation still exists in rural labor markets (Fleisher and Wang, 2003a and 2003b). Recently, the Development Research Center of China's State Council conducted a nationwide survey of rural and urban enterprises on local protection (DRC, 2003). In regard to the forms of protection frequently used by local authorities, 'intervening in the labor market' tops the long list of 42 varieties. More specifically, this practice takes the form of 'giving priority to employing local citizens,' and 57.7 percent of the enterprises surveyed indicate that their local governments engage in such practices. The policy challenge lies in the design of incentive structures of local government in employment and wage determination that would lead to increased labor-market efficiency.

While reducing mobility barriers is important for factor market development, an alternative approach of raising rural labor productivity is to create nonfarm job opportunities within commuting distance of village residents (Johnson, 2002). As Johnson suggests, the required capital investment of moving rural workers and their families to urban jobs is enormous---much higher than creating nonfarm jobs in rural regions. This is because capital investment is required not only for the construction of housing but also the public costs of creating new urban communities, such as roads, public utilities and schools. In contrast, large savings are possible if jobs are created near the homes of rural workers. Johnson also points out that, in order to make villages attractive places to live, it is necessary to provide basic amenities to rural residents, including tap water, home toilets, affordable electricity and quality access to television signals. Other complementary policies include increasing educational investment and raising the quality of rural schools. Unraveling roles of schooling in the rural-urban nexus is an interesting challenge. For example de Brauw and Giles (2006) demonstrate that increased urban job opportunities feedback negatively to schooling attainment in rural communities, while Liu (forthcoming) shows that higher levels of community schooling attainment in rural communities increase the likelihood that individual rural residents will choose local nonfarm employment over migration—evidence of a positive externality.

The lack of correct *hukou* subjects the 'floating population' not only to the risk of various arbitrary actions by local authorities carried out in the name of preserving social order and public safety, but also to significant economic costs in the form of fees, work permits, bribes and so on. Perhaps the most significant example is schooling. Although national and local laws require that the municipality of residence (whether or not one's *hukou*

grants permanent residence rights) is responsible for providing nine years of primary schooling for each child., in practice this right is often denied. The result is that migrant families must pay fees ranging from 3,000 to 30,000 yuan per year per child to have their children admitted to the regular school system or cooperate with other migrant families in providing their own schools and teachers. Even so, newspapers often contain reports of migrant schools being torn down by public authorities on grounds that they provide inferior schooling or are safety hazards (which are probably true claims; see e.g., Xie, 1999).

None of what we have said is meant to deny that there are in fact costs of providing public services for migrants, and these costs must be borne by the workers themselves, by their employers, by government, or some combination of them. The main problem at present appears to be that current laws and regulations frequently militate against the efficient allocation of labor, and where there are provisions to ensure the equitable treatment of migrants, they are often not incentive compatible with the goals of local governments.

3. Urban Labor Markets

China's urban market reform began late and proceeded slowly relative to the sweeping rural reform. Within the urban sector commodity and goods markets were liberalized earlier and at a faster pace than labor markets.[12] On its face, the liberalization of commodity and goods markets would seem to have made ownership reform a simpler matter in urban areas than in rural areas, where procurement of essential inputs (e.g. electric power) militated in favor of enterprises retaining some relationship with local governments. However, urban market reform involve complex structural change in ownership along with political sensitivity, which introduced their own complications (see Korzec, 1992).

Urban labor arrangements under central planning included labor allocation by labor bureaus; *hukou* (residence permit) required for housing, food subsidy, schooling, and health benefits; *dangan* (personal file) under the control of work unit or educational institution with its transfer required for a new job; incentives determined by permanent job tenure through retirement (the 'iron rice bowl'); and wage determination according to the 'wage grid' (Meng, 2000). All of these institutional arrangements imposed severe limitations on job mobility, and worker incentives to move were restricted further by provision of social security and even the education of children by the work units (SOEs or urban collectives).

3.1 The need for urban labor-market reform

There is ample evidence that China's urban labor markets were inefficient under planning and continue to be so in the reform era (Korzec, 1992; Meng and Kidd, 1997). Big cities, coastal provinces, state enterprises, and production workers were favored over smaller urban areas, the interior, and non-traditional state enterprises well beyond the end of the Cultural Revolution. As a consequence, the benefits of China's exceptional growth have eluded large segments of the population, especially in the interior. Wage policies under planning in China (initially taken from the Soviet schemes, and also applied to much of Eastern Europe) aimed to promote income equality in the industrial sector by raising the wages of lower-skilled workers above their marginal products while severely restricting the pay of higher-skilled workers. Not only did these policies discourage individual enterprises from minimizing costs, they also seriously impeded rural-urban and interregional migration, preventing labor from flowing to its most productive use.

3.2 Urban labor-market reform policies

The gradualism has characterized almost all of China's transition from planning, also adequately describes the liberalization of urban labor markets. The labor contract system, which represents a relaxation of the job security provided under the 'iron rice bowl' arrangements, was first introduced in 1983 to cover new entrants to the state and collective enterprises. Incentive reform was at the heart of the transition to the HRS in agriculture that spread with a lag to rural enterprises and then to urban enterprises.

By 1995, 93 percent of SOE employees were under contract (Meng 2000, p. 81-2, Table 6.1). These reforms transferred some autonomy in hiring decisions from planners to enterprises, but left planners great scope to influence regional employment targets (Meng and Kid, 1997). Wage reforms introducing various profit-sharing arrangements were introduced beginning in the late 1970s. However, the degree to which various bonus schemes actually provided better incentives to reduce shirking and increase worker productivity is open to question (Meng and Kidd, 1997). A managerial responsibility system was introduced later and described by Grove et al. (1995); subsequently, management acquired additional wage discretion (Xu, 2000). Fleisher and Wang (2001) and Knight and Li (2003) do find some evidence that wage-setting behavior goes beyond simple profit-sharing and incorporates some incentive-wage effects. Their data pertain to both rural and urban enterprises for the late 1980s and in the 1990s through 1999.

3.3 Has reform been effective?

There is ample evidence in published research to establish the inefficiency of labor allocation in China during the 1980s and into the early 1990s. At the firm level, Fleisher et al. (1996) provide evidence of gross discrepancies between wages and MPL in a major manufacturing industry.

Fleisher and Wang (2003a and b) corroborate this pattern in both rural and urban enterprises under various ownership forms through the early 1990s. These studies not only showed that college-trained workers were grossly underpaid relative to their marginal products, there is also considerable evidence from national surveys that the private returns to schooling in urban China were much smaller than in comparable transition and emerging economies as well as in advanced market economies. Since approximately 1995, however, returns to schooling have increased markedly in urban China (Zhang et al., 2005). Fleisher and Wang (2003c) also discuss this issue and cite numerous published and unpublished studies that corroborate the low return to schooling in China since reform. Fleisher, Hu, and Li (2006) find significant underpayment of workers relative to their marginal contributions to production, and the degree of underpayment is greater for highly educated workers.

Although possession of an urban *hukou* makes it vastly easier for workers to move from job to job, mobility within the urban sector remains limited. Moreover, workers who have transferred from rural to urban *hukou* status are unable to entirely overcome the effects and stigma of their rural backgrounds (Liu, 2006). Generall*y*, workers who are qualified for high-level technical and 'white-collar' jobs, particularly through schooling at the college level, are eligible for urban residence in most locations (Chan and Zhang, 1999). There is evidence that this greater potential mobility has begun to pay off for the better educated. Zhang et al. (2005) show that returns to schooling, particularly for college graduates, have risen sharply; and that, by 2001, returns in state-owned enterprises approached to those in non-public enterprises (e.g. the private and jointly-owned sector), whereas, until the early 1990s, returns had been far higher in the non-public sector, albeit low by international standards (Zhou, 2000; Fleisher and Wang,

2003c).

Without barriers to movement, workers would seek jobs where pay is highest, other things equal, and firms would tend to locate their production where pay is lowest, and such adjustments would tend to reduce productivity and income differentials. There is evidence that even at the local level, interfirm worker mobility within China remains limited. Appleton *et al.* (2002) reports that by the end of 1999, *xia gang* workers laid off from SOEs, urban collectives, and local governments far outnumbered the 'official' (registered) unemployed, contributing to a *de facto* urban unemployment rate of more than 8 percent. Those most likely to be laid off and also to experience the longest spells of unemployment are the less educated, older workers, and female workers. The median spell of unemployment (including non-completed spells) was 10 months; the mean was 18 months. By comparison, in the United States from 1980 through 1993, the average annual completed duration of unemployment ranged from10 to14 weeks, while that in Canada ranged from 14 to 20 weeks (Baker et al., 1998). Giles, Park, and Zhang (2005) use data from the 2002 follow-up to the 2001 China Urban Labor Survey for five cities (Beijing, Wuhan, Shenyang, Fuzhou, and Xian) to construct an internationally comparable measure of urban unemployment. They report an unemployment rate of 14.0% for the cities in their sample. They use their results to estimate the unemployment experience of permanent urban residents for the period 1996 through September 2002 and deduce an increase in unemployment from 6.1% to 11.1%, about 2.75 times larger than the official data suggest. They show that permanent residents have higher unemployment than migrants. They emphasize that official procedures for measuring unemployment lag far behind the liberalization of

labor markets, and that there is need for statistical measures to catch up to market reality.

Further evidence of lack of urban labor mobility is provided by Knight and Li (2003). They use data relating to 1995 and 1999 from two urban household surveys conducted by the Chinese Academy of Social Sciences and the National Bureau of Statistics. The surveys contain worker-provided information on firm profitability and other characteristics. They find that interfirm wage differences increased during the period among all workers, more so among low-paid workers than among high-paid workers. They infer that interfirm mobility of workers was low. Employees of loss-making firms evidently preferred to retain their jobs, accepting wage cuts, rather than seek other employment. This behavior is eminently understandable in the context of China's poorly developed social safety net (Dong and Ye, 2003).

Evidence of inefficient distribution of human resources across regions abounds. Fleisher and Chen (1997) provide evidence of immense interregional productivity gaps among Chinese provinces in the 1980s. Moreover change seems to be working in the wrong direction. Jones *et al*. (2003) reports that among 200 cities in China through 1999, policies that, *a priori*, are likely to raise productivity, such as openness to trade (e.g. special economic zones) and foreign direct investment, have also contributed to diverging income growth rates, thus raising income inequality. This contributes to pressures on the cities to absorb the millions of rural residents who seek urban jobs. Although there is evidence that regional segmentation has diminished since the mid-1990s (Poncet, 2003a and 2003b), it is still an important force limiting China's growth.

A comparison of China with the United States is instructive in regard to regional labor-market integration. Song et al. (2000) show that, in

1991, the coefficient of variation of per-capita GDP among 476 Chinese cities was 0.809, while the coefficient of variation of per-capita income was 0.259. In the late 1990s, the coefficient of variation of output per worker among 100 United States metropolitan statistical areas was 0.161 and the coefficient of variation of per capita income was 0.149 (Sprint, 2003). In 2001, the coefficient of variation of per capita personal income among 318 United States metropolitan statistical areas was 0.199 (authors' calculations from United States BEA, 2003). There are two remarkable features in this comparison of China with the United States. One is that urban per-capita GDP in China had four times as much variation relative to its mean as that in the U.S. The other is that urban per capita income in China indicates more regional inequality than in the U.S., albeit far less inequality of income than of production per capita.

3.4 Unemployment insurance, health insurance, and pensions

Enterprise reform in urban labor markets has outpaced social reform that would facilitate the reallocation of workers from declining to growing enterprises. As noted above, even such basics as the measurement of unemployment is very undeveloped in China (Giles, Park and Zhang, 2005). Labor resources released as SOEs and urban collectives seek to survive under increasingly hard budget constraints are wasted to society and suffer increasingly difficult economic hardships if they do not find new employment. These unemployed and disenfranchised workers are a major source of political unrest as is widely known. But perhaps an equally serious distortion results when employed workers, observing the risk in seeking to change jobs, remain employed in low-productivity firms when they could increase their productivity and potential earnings under alternative employment. For China to sustain its remarkable growth record, labor resources released as enterprise efficiency increases must be

transferred, through markets, to productive employment. We next consider the remaining policy issues inherent in labor-market reform.

As emphasized by Appleton *et al.* (2002) and Giles, Park and Zhang (2005), serious urban unemployment is a relatively recent phenomenon in China. While not directly comparable, the Great Depression of the 1930s created social disruption and unrest associated with mass layoffs and involuntary unemployment that was accommodated poorly under a variety of state programs. Federal legislation leading to the establishment of national coordination of state unemployment policies dates to that era in the United States. Similarly, the unemployment crisis in China is forcing the Government to formulate policies to deal with this explosive issue. The situation illustrates the 'crash-then-law' development of legislation emphasized by (Chen, 2003). Dong and Ye (2003) show clearly that unemployment insurance as a portable right available to all workers under clearly specified conditions does not exist in China. There is a hodgepodge of local and provincial arrangements that are proffered in varying fashions primarily to those holding *hukou* in the community providing the insurance. The principal burden of providing benefits falls on a combination of semi-private insurance companies funded by enterprise payments, the enterprises themselves, and local governments. Ironically, the Central Government opted out of guaranteeing unemployment benefits to most workers in the mid-1980s, as urban reform began to take off. China faces immense challenges in shouldering the fiscal burden of paying the government's share of unemployment benefits that result from the continued movement toward greater efficiency in government enterprises, and in dealing with the social unrest attributable to laid-off and retired workers whose nominal claims for unemployment compensation and

pensions are eroded by financial inability and/or lack of will to fund them (Appleton *et al.*, 2002).

Appleton *et al*. (2002) find no impact of the size of unemployment benefits on the length of unemployment. They interpret this empirical result (which is at odds with the estimated impact of unemployment compensation on unemployment duration in most studies) to be evidence of the purely involuntary nature of unemployment in China and also to the unattractiveness of the size of unemployment benefits relative to the wages of employed workers. They also find that government employment agencies and former work units remain by far the most important channels through which unemployed workers seek and find new jobs. Informal channels appear to be used much less frequently, and when they are, prove to be less effective. One reason for this appears to be that when a work unit or government agency bears some financial responsibility for unemployment compensation, there is greater incentive to aid in the job-search process. Perhaps a lesson can be drawn from this observation in designing improved incentives for the relocation and reemployment of workers who become unemployed through layoff or for other reasons.

Migrant workers without urban *hukou* face a different set of constraints. Many migrants face unemployment whether or not they leave their rural homes, given severe land constraints in much of China's countryside. In other words, even though rural 'employment' may be in principle the alternative for unemployed rural-urban migrants, the *de facto* alternative for those without either a regular job or urban *hukou* is likely to be subsistence on the urban fringe in migrant 'villages,' where residents make do as best they can, for example, as self-employed trash collectors and trash pickers in urban garbage dumps (Beja *et al*., 1999). Although such subsistence activity might theoretically be viewed as a 'solution' to the

urban unemployment problem among migrant workers who literally find themselves between rocks and a hard place, there are genuine economic and social problems of external costs. Those costs manifest themselves in terms of health problems, schooling issues, and the social unrest that government officials know they cannot ignore without serious threat to social stability and their own survival. This is clearly an area in which rural land policies, provision of health care, and housing policy intersect.

4. The Impact of the WTO

China's accession to membership in the World Trade Organization will surely have important effects on the labor force and labor market as production of goods and services becomes more closely aligned with China's comparative advantages. Given that comparative advantages will be identified with a lag through market signals, we can only anticipate with uncertainty what labor force reallocations are likely to occur. Further uncertainty arises from the unknown course of the *yuan*. Will China accede to pressure to float its currency in relation to the dollar and euro? If some flexibility is allowed in foreign-exchange markets, in which direction will the *yuan* move? Although it may be 'common knowledge' that the *yuan* is grossly undervalued, some say by as much as 40 percent, how certain can we be that floating it will be sufficient for it to move toward purchasing-power parity with the world's major hard currencies? If China were to fully free up its foreign currency markets, might not 'capital flight' balance or even exceed the impact of net foreign investment? (Gunter, 2004).

Perhaps the most interesting and important question is the impact of foreign trade liberalization on the rural-urban disequilibrium, surely China's major deviation from optimal factor allocation. In the short run, China is viewed as labor-rich and land-poor, with both labor productivity and earnings in agriculture and rural areas in general being much lower than

in urban areas. An implication of China's intensive labor endowment is that agricultural production should shift away from grain production toward labor-intensive crops; access to world markets should be favorable toward exports of commodities that benefit from intensive cultivation (Huang et al., 2000; Johnson, 2000; Lin, 2000). There is evidence that this shift has already taken place. China has displaced the Untied States as a major exporter of many fruits and vegetables not only to other Asian markets, but also to the United States itself. For example, garlic imports from Hong Kong and China grew from less than 1 million pounds in 2000 to 112 million pounds in 2005 (Barrionuevo, 2006). Moreover, while rising domestic income levels will reinforce the trend toward increased domestic consumption of luxury fruits and vegetables and dairy products, WTO will increase foreign competitive pressure on domestic producers in other areas.[13] Huang *et al.* (forthcoming) forecast that the net effect of these opposing forces on China's rural households will be positive, but unequally distributed. Households in the western region, where agricultural products have been more heavily protected from foreign competition, are most likely to suffer under WTO liberalization, for example. In a similar vein, Hertel and Zhai (2006) report simulation results based on a household-disaggregated, recursively dynamic CGE model to calculate the impact of current factor market distortions and WTO entry. They emphasize that foreign-trade liberalization will be generally beneficial to China's workers, but that for the benefits to be broadly shared, foreign-trade liberalization must be accompanied by factor market reforms. In particular, Hertel and Zhai show that without reform of rural land property rights, which would reduce the opportunity cost of rural-urban migration, and *hukou* regulation, China's rural workers will continue to lag behind urban, industrial workers in sharing the benefits of China's economic growth.

Within the services and manufacturing sectors, we may expect both direct and indirect effects. Direct effects come from competition with imports and from new firms opening within China. There will obviously be changes in the mix of ownership categories, with an increase in foreign-owned firms that provide further competition for the state-owned group. Chen *et al.* (2003) corroborate the findings of Knight and Li (2003), that there exist significant barriers to interfirm mobility in China, particularly among firms of different ownerships types. This has important implications for the degree to which currently employed workers will easily transfer to new enterprises. . Labor-market effects are likely to be concentrated within particular industries. For example, WTO accession is likely to put increasing pressure on major SOEs in the areas of financial services (e.g., Yeo, 2003). Direct effects will come as foreign-owned firms enter the financial services markets; demand will increase for domestic experts familiar with the language, local customs, and legislation. Some of these new employees may come from Chinese educated and currently working abroad, while others come from SOEs, which will be forced to meet the competition with higher pay or suffer loss of their most valuable workers, in turn forcing them to reduce their size and scope. Membership in the WTO will raise the presence of foreign-owned firms. If workers feel that taking jobs in foreign-invested enterprises risks the loss of traditional benefits available from SOEs, there will be less incentive to leave protected employment voluntarily.

Provision of an improved social safety net will permit labor markets to adjust more rapidly and the economy to reap greater benefits from the potential influx of new enterprises under WTO liberalization. Indirect effects will come, for example, from the lending policies of foreign-owned financial institutions. We may speculate that, if lending

channels to township and village enterprises are enhanced both by the presence of more efficient financial institutions and/or that competitive pressure changes the performance of China's Rural Financial Cooperatives (Xie, 2003), rural nonagricultural employment opportunities will be enhanced.

In manufacturing, the entry of foreign-invested firms producing both for domestic consumption and for exports is predicted to expand sharply, e.g., in the automobile industry (Landler, 2003). To the extent that Volkswagen, General Motors, Daimler-Chrysler, Nissan, and others introduce their management skills and technology to China's low-cost labor, job opportunities and wages in urban manufacturing will increase. A recent example of projected export growth for China's auto industry is noted in an article, 'Daimler and Chery of China Planning Subcompact for U.S.' (Bradsher, 2006). How these forces play out China's labor markets will depend largely on the remaining barriers, *hukou* and otherwise, to interfirm job changes and intercity and interregional labor mobility. To share in the benefits from greater employment opportunities, current employees of SOEs need to be able to take the new and better jobs without totally exposing themselves to the risk of unprotected unemployment, losing all health-insurance coverage, and so on.

5. Conclusions

We have sketched developments in labor-market reform over almost three decades in China. Although a fully functioning labor market approaching the flexibility of those of the major industrial nations remains to be achieved, there have been major successes. Among the most important accomplishments, there has been a gradual removal of the planning framework in the organization of labor within and among enterprises. The dominant role of rural communes in agriculture has disappeared, and state

and collective enterprises in the urban sector are diminishing in their relative importance, both in terms of output and employment. Multiple forms of ownership and enterprise organization have emerged, and the role of private, foreign and joint-venture companies has been growing and accelerating with China's accession into the WTO. Moreover, there have been crucial and fundamental changes in work incentives for rural families, and for both managers and employees of enterprises. These include the removal of lifetime security for urban workers and the introduction of wage and managerial contract schemes more compatible with profit-maximization and cost-minimization. State-owned enterprises are increasingly subject to hard budget constraints. In addition, there has been gradual but incomplete movement toward integrated product and labor markets.

Nevertheless, there are still serious obstacles that stand in the way of smoothly functioning labor markets and often exacerbate the growing income inequality attributable to the movement toward a market economy. Most significant, *hukou* remains a critical barrier to rural-urban and inter-city integration. There is much evidence of village, city, and provincial border effects attributable both to *hukou* restrictions and to local protectionism along with the inability or unwillingness of the Central Government to enforce existing laws and regulations. In addition, there remain barriers to changing the ownership structure of firms, especially from state-owned and collective to private ownership, as well as acquisitions across city and regional boundaries, due to major weaknesses and incomplete reforms in the social safety net: in particular, unemployment insurance, health insurance, and the enterprise-based pension system. Another major deterrent is the inadequate development of complementary markets, particularly the housing market.

Given these perspectives, what are the key areas for further reform? We emphasize two that have high policy significance: local protection and coordination of reform. First, if local protectionism is to be reduced and ultimately eliminated, the Central Government must understand the incentives that local and provincial governments need to accept nationwide laws and regulations. In this regard, there is a serious need for research to identify relevant interest groups and the true objectives of local governments. We need to know who are the potential winners and losers from such specific reforms as the removal of mobility restrictions. Only by understanding the answers to these questions can incentive compatible rules be designed that will induce the desired responses from the involved parties. The Government should be prepared to compensate losers appropriately to overcome resistance to existing and new laws and regulations. The benefits derived from successful policy reform would provide incentives for all parties to implement the new rules and promote more efficient labor market institutions.

Second, labor market reform must be coordinated, because sensible deregulation in one area often creates the need for reform in other areas. An outstanding example is the need to coordinate reform of the social safety net with redeployment of SOE workers and reform of housing markets. In rural markets, procurement obligations and individuals' freedom to choose their place and type of job must be liberalized. Further, these policies affect, and are affected by land tenure reform and will have important effects on urban labor markets through migration. The synergy created by coordinated reforms will amplify the benefits accruing to the labor sector and to the entire economy.

References

Appleton, S., Knight, J., Song, L. and Xia, Q. (2002). 'Labor Retrenchment in China: Determinants and Consequences,' *China Economic Review* 13 (2-3), 252-276.

Ash, R.F. (1988). 'The Evolution of Agricultural Policy,' *China Quarterly* 116, 529-55.

Au, Chun-Chung and Henderson, J. Vernon (2003). 'Estimating Net Urban Agglomeration Economics with an Application to China,' manuscript, Providence, RI: Department of Economics, Brown University.

Baker, Michael, Corak, Miles and Heisz, Andrew (1998). 'The Labour Market Dynamics of Unemployment Rates in Canada and the United States,' *Canadian Public Policy* 24(s1), 72-89.

Barrionuevo, Alexei (2006). 'Imports Spurring Push to Subsidize Produce.' *New York Times* December 3.

Beja, Jean P., Bonnin, Michael, Feng, Xiaoshuang and Can, Tang (1999). 'How Social Strata Come to be Formed: Social Differentiation among the Migrant Peasants of Henan Village in Peking,' *China Perspectives* 23(May-June).

Bowlus, Audra J. and Sicular, Terry (2003). 'Moving toward Markets? Labor Allcoation in Rural China.' *Journal of Development Economics* 71(2), 561-583.

Brandt, Loren, Huang, Jikun, Li, Guo and Roselle, Scott (2002). 'Land Rights in China: A Comparative Review of the Facts, Fictions, and Issues.' *China Journal* 47, 67-97.

Bradsher, Keith (2006). 'Daimler and Chery of China Planning Subcompact for U.S.' *New York Times* October 4.

Cai, Fang (2003). 'Removing the Barriers to Labor Mobility: Labor Market Development and Its Attendant Reforms,' paper presented at the World Bank Workshop on National Market Integration in China, Beijing.

Cai, Fang and Dewen Wang (1999). 'Sustainability and Labor Contribution of Economic Growth in China,' *Journal of Economic Research* (In Chinese) 10, 62-68.

Cai, Fang, Wang, Dewen, and Yang, D. U. (2002). 'Regional Disparity and Economic Growth in China: The Impact of Labor Market Distortions,' *China Economic Review* 13(2),197-212.

Chan, Kam Wing and Zhang, Li (1999). 'The *Hukou* System and Rural-urban Migration: Processes and Changes,' *The China Quarterly* 160(1), 818-855.

Chang, Gene Hsin, Brada, Josef C. (2006). 'The Paradox of China's Growing Under-Urbanization. *Economic Systems* 30(1), 24-40.

Chen, Zhiwu (2003). 'Capital Markets and Legal Development: The Chinese Case,' *China Economic Review* 14(4), 451-472.

Chen, Yi, Démurger, S. and Fournier, Martin (2003). 'Wage Differentials and Ownership Structure in Chinese Enterprises,' manuscript. Clermont-Ferrand, France: CERDI, University of the Auvergne.

Clarke, Donald C. (2003). 'Corporate Governance in China: An Overview,' *China Economic Review* 14(4), 494-507.

de Brauw, Alan, Huang, Jikun, Rozelle, Scott, Zhang, Linxiu, and Zhang, Yigang. (2002). 'The Evolution of China's Rural Labor Markets during the Reforms,' Journal of Comparative Economics 30: 329-353.

de Brauw, Alan and Giles, John (2006). 'Migrant Opportunity and the Educational Attainment of Yourth in Rural China.' Working paper, Michigan State University. http://www.msu.edu/~gilesj/adjg1final.pdf

Dong, K. and Ye, X. F. (2003). 'Social Security Reform in China,' *China Economic Review* 14(4), 417-425.

DRC, Development Research Center, the State Council of China. (2003). 'Research on Measures, Objects and Degrees of Local Protection in Chinese Markert: an Analysis based on Sample Survey,' paper presented at the world Bank Workshop on National Market Integration in China, Beijing.

Findlay, C., Watson, A. and Wu, H.X. (1994). *Rural Enterprises in China*. St. Martin's Press, New York.

Fleisher, Belton and Chen, Jian. (1997). 'The Coast-Noncoast Income Gap, Productivity, and Regional Economic Policy in China,' *Journal of Comparative Economics* 25(2), 220-236.

Fleisher, Belton, Dong, Keyong and Liu, Yunhua. (1996). 'Education, Enterprise Organization, and Productivity in the Chinese Paper Industry,' *Economic Development and Cultural Change* 44(3), 571-87.

Fleisher, Belton M., Hu, Yifan and Li, Haizheng (2006). 'Economic Transition, Higher Education and Worker Productivity in China.' Unpublished manuscript, Department of Economics, Ohio State University. http://www.econ.ohio-state.edu/Fleisher/working_papers/Paper_Fleisher_Hu_Li_03_9_20061.pdf

Fleisher, Belton M., Li, Haizheng and Zhao, Min Qiang (2006). 'Human Capital, Economic Growth, and Regional Inequality in China.' Unpublished manuscript, Department of Economics, Ohio State University. http://www.econ.ohio-state.edu/Fleisher/working_papers/DisparityPaper10_28_05.pdf

Fleisher, Belton M and Wang, Xiaojun (2001). 'Efficiency Wages and Work Incentives in Urban and Rural China,' *Journal of Comparative Economics* 29(4), 645-662.

Fleisher, Belton M. and Wang, Xiaojun (2003a). 'Potential Residual and Relative Wages in Chinese Township and Village Enterprises,' *Journal of Comparative Economics* 31(3), 429-443.

Fleisher, Belton M. and Wang, Xiaojun (2003b). 'Skill Differentials, Returns to Schooling, and Market Segmentation in a Transitional Economy: The Case of Mainland China,' *Journal of Development Economics* 73(1), 315-328.

Fleisher, Belton M. and Wang, Xiaojun (2003c). 'Returns to Schooling in China Under Planning and Reform,' working paper, Department of Economics, The Ohio State University.

Fleisher, Belton M. and Yang, Dennis T. (2006). "Problems of China's Rural Labor Markets and Rural-Urban Migration," *The Chinese Economy* 39(3), 6-25.

Forbes, D. and Linge, G. (1990). 'China's Spatial Development: Issues and Prospects.' In G. Linge & D. Forbes (Eds.), *China's Spaticla Economy – Recent Development and Reforms.* Hong Kong: Panther Press.

French, Howard W. (2004). 'New Boomtowns Change Path of China's Growth.' *New York Times* July 28.

Giles, John, Park, Albert and Zhang, Juwei (2005). 'What is China's True Unemployment Rate?' *China Economic Review* 16(2), 149-170.

Grove, T., Hong, Y., McMillan, J. and Naughton B. (1995). 'China's Evolving Managerial Labor Market,' *Journal of Political Economy* 103(4), 873-892.

Gunter, Frank (2004). 'Capital Flight from the people's republic of China: 1984-1999,' *China Economic Review* 15(1), in press.

Hertel, Thomas and Zhai, Fan (2006). 'labor Market Distortions, Rural-Urban Inequality and the Opening of China's Economy.' *Economic Modelling* 23(1), 76-109.

Huang, J., Rozelle, S. and Zhang, L. (2000). 'WTO and Agriculture: Radical Refrms or the Continuatioin of Gradual Transition?' *China Economic Review* 11(4), 397-401.

Huang, J., Jun, Yang, Xu, Zhigang, Rozelle, Scott and Li, Ninghui (forthcoming). 'Agricultural Trade Liberalization and Poverty in China,' *China Economic Review.*

Johnson, D. Gale (2000). 'The WTO and Agriculture in China,' *China Economic Review* 11(4), 402-404.

Johnson, D. Gale (2002). 'Can Agricultural Labour Adjustment Occur Primarily through Creation of Rural Non-farm Jobs in China?' *Urban Studies* 39(12), 2163-2174.

Johnson, D. Gale (2003). 'Provincial Migration in China in the 1990s,' *China Economic Review* 14(1), 22-31.

Jones, Derek C., Li, Cheng, and Owen, Ann L. (2003). 'Growth and Regional Inequality in China during the Reform Era,' *China Economic Review* 14(2), 186-200.

Kahn, Joseph (2005). 'China to Drop Urbanite-Peasant Legal Differences,' *New York Times* November 2.

Knight, John and Li, Shi (2003). 'Wages, Firm Profitability and Labour Market Segmentation in Urban China,' manuscript, Oxford, UK: Department of Economics, Oxford University.

Knight, John and Song, Lina (1999). *The Rural-Urban Divide: Economic Disparities and Interactions in China*. Oxford, U.K.: Oxford University Press.

Korzec, M. (1992). *Labor and the Failure of Reform in China*. London: Macmillan.

Kung, J. K. (2002). 'Off-Farm Labor Markets and the Emergence of Land Rental Markets in Rural China,' *Journal of Comparative Economics* 30(2), 395-414.

Landler, Mark (2003). 'Big Hope for Filling China's Garages,' *New York Times*, September 12.

Lange, Oskar and Taylor, Fred M. (1966), *On the Economic Theory of Socialism*. New York: McGraw-Hill.

Lin, Justin Y. (1992). "Rural Reforms and Agricultural Growth in China,' *American Economic Review* 82(1): 34-51.

Lin, Justin Y. (2000). 'WTO Accession and China's Agriculture,' *China Economic Review* 11(4), 405-408.

Liu, Zhiqiang (forthcoming). 'Human Capital Externalities and Rural-Urban Migration: Evidence from Rural China,' *China Economic Review*.

Liu, Zhiqiang (2006). 'Institution and Inequality: The *Hukou* System in China,' *Journal of Comparative Economics* 33(1), 135-157.

Lohmar, Bryan and Rozelle, Scott (2001). 'The Rise of Rural-to-Rural Labor Markets in China,' *Asian Geographer* 20 (1-2): 101-23.

Lu, Zhigang and Song, Shunfeng (2006). 'Rural-Urban Migration and Wage Determination: The Case of Tianjin, China.' *China Economic Review* 17(3), 337-345.

MOA, Ministry of Agriculture, (2001). 'A Study on Change of Rural Population and Tenure System Reform in China,' Project Report, Beijing.

Meng, Xin (2000). *Labor Market Reform in China*. New York: Cambridge University Press.

Meng, Xin and Kidd, M. P. (1997). 'Wage Determination in China's State Sector in the 1980s,' *Journal of Comparative Economics* 25(3), 403-442.

Meng Xin and Zhang, Junsen (2001). 'The Two-Tier Labor Market in China – Occupational Segregation and Wage Differentials between Urban and Residents and Rural Migrants in Shanghai,' *Journal of Comparative Economics* 29(3), 485-504.

Naughton, Barry (1996). *Growing out of Plan: Chinese Economic Reform 1978-1993*. Cambridge, United Kingdom: Cambridge University Press.

NBS, National Bureau of Statistics, (1985-2001). *China Statistical Yearbook.* Beijing: China Statistical Publishing House.

Nolan, P. and White, G. (1984). 'Urban Bias, Rural Bias or State Bias? Urban-Rural Relations in Post-Revolutionary China,' *Journal of Development Studies* 20(3), 52-81.

Ohnesorge, John K. M. (2003). 'China's Economic Transition and the New Legal Origins Literature,' *China Economic Review* 14(4), 485-493.

Perkins, Dwight and Yusuf, Shahid (1984). *Rural Development in China.* Baltimore: John's Hopkins University Press.

Poncet, Sandra (2003a). 'Domestic Market Fragmentation and Economic Growth in China,' manuscript. Clermont-Ferrand, France: University of the Auvergne, CERDI.

Poncet, Sandra (2003b). 'Provincial Migration Dynamics in China: Borders, Centripetal Forces, and Trade,' manuscript. Clermont-Ferrand, France: University of the Auvergne, CERDI.

Putterman, Louis (1993). *Continuity and Change in China's Rural Development: Collective and Reform Eras in Perspective.* New York: Oxford University Press.

Sicular, Terry (1988). 'Agricultural planning and pricing in the post-Mao period,' *China Quarterly* 116, 671-705.

Sicular, Terry, Yue Ximing, Gustafsson, Bjorn and Li, Shi (forthcoming). 'The Urban-Rural Income Gap and Inequality in China,' *The Review of Income and Wealth*.

Song, Shunfeng, Chu, George S.-F. and Cao, Rongqing (2000). 'Intercity Regional Disparity in China,' *China Economic Review* 11 (Fall): 246-261.

Sprint (2003). Online publication at: 'http://www3.sprint.com/PR/CDA/PR_CDA_Press_Releases_Detail/0,3681,1048,00.html.'

Wang, X. L. (1997). 'What Contributed to China's Rapid Rural Industrial Growth during the Reform Period?' Ph.D. dissertation. Canberra: The Australian National University.

World Bank. (1997). *China 2020: Development Challenges in the New Century*. Wahsington, D.C.: World Bank.

Xie, Ping (2003), 'Reform of China's Rural Credit Cooperatives and Policy Options,' *China Economic Review* 14(4), in press.

Xu, L. C. (2000). 'Control, Incentives and Competition: the Impact of Reform on Chinese State-Owned Enterprises,' *Economics of Transition* 8(1), 151-173.

Yang, Dennis Tao (1997). 'China's Land Arrangements and Rural Labor Mobility,' *China Economic Review*, 18(2), 101-115.

Yang, Dennis Tao (2004). 'Education and Allocative Efficiency: Household Income Growth during Rural Reforms in China,' *Journal of Development Economics* 74(1): 137-162.

Yang, Dennis Tao and Cai, Fang (2003). 'The Political Economy of China's Rural-Urban Divide.' In *How Far across the River? Chinese Policy*

Reform at the Millennium, eds. Nicholas C. Hope, Dennis Tao Yang and Mu Yang Li. Stanford: Stanford University Press.

Yang, Dennis Tao and Zhou, Hao (1999). 'Rural-Urban Disparity and Sectoral Labor Allocation in China,' *Journal of Development Studies* 35(3), 105-133.

Yao, Yang (1999). 'Rural industry and labor market integration in eastern China.' *Journal of Development Economics* 59, 463-496.

Yeo, Steven (2003). 'The PRC Qualified Foreign Institutional Investors Market,' *China Economic Review* 14(4), 443-50.

Zhang, Junsen Zhao, Yaohui, Park, Albert and Song, Xiaoqing (2005). 'Economic Returns to Schooling in Urban China, 1988-2001,' *Journal of Comparative Economics* 33(4), 730-752

Zhang, Xiaobao and Tan, Kong-Yam (2003). 'Factor Market Integration across Sectors and Regions: Implications for Economic Growth in China,' paper presented at the World Bank Workshop on National Market Integration in China, Beijing.

Zhang, Xinmin et al. (1994). 'The Analysis of Rural-Urban Income Disparity.' manuscript, National Bureau of Statistics of China.

Zhao, Yaohui. (2000). 'Rural-to-Urban Labor Migration in China: the Pat and the Present.' In Loraine West and Yaohui Zhao, Eds., *Rural Labor Flows in China*, pp. 15-33. Berkeley: University of California Press.

Zhou, Xueguang (2000). 'Economic Transformation and Income Inequality in Urban China: Evidence from Panel Data,' *American Journal of Sociology* 105(4), 1135-74.

Table 9.1 Distribution of the Rural Labor Force among Economic Activities, 1978-2000 (millions)

Year	Total Rural Laborers	Agricultural Laborers	Nonagricultural Laborers	
			Total	TVE Workers
1978	306.4	284.6	21.8	22.2
1979	310.2	278.3	31.9	23.8
1980	318.4	298.1	20.3	25.4
1981	326.7	289.8	36.9	25.9
1982	338.7	300.6	38.1	27.7
1983	346.9	303.5	43.4	29.3
1984	359.7	300.8	58.9	49.2
1985	370.7	303.5	67.2	67.2
1986	379.9	304.7	75.2	77.0
1987	390.0	308.7	81.3	85.7
1988	400.7	314.6	86.1	93.0
1989	409.4	324.4	85.0	91.3
1990	420.1	333.4	86.7	90.2
1991	430.9	341.9	89.0	93.7
1992	438.0	340.4	97.6	103.3
1993	442.6	332.6	110.0	120.6
1994	446.5	326.9	119.6	117.6
1995	450.4	323.3	127.1	125.5
1996	452.9	322.6	130.3	131.7
1997	459.6	324.3	135.3	127.7
1998	464.3	326.3	138.0	122.7
1999	469.0	329.1	139.9	127.0
2000	479.6	328.0	151.6	128.2
2001	490.9	324.5	166.4	130.9
2002	489.6	319.9	169.7	132.9
2003	487.9	312.6	175.3	135.7
2004	487.2	306.0	181.2	138.7

Note: the number of TVE workers may exceed rural nonagricultural laborers because some TVEs engage in agricultural production.
Data source: NBS (various years).

Table 9.2 Distribution of the Urban Labor Force by Types of Ownership, 1978-2000 (millions)

Year	Total Employed Persons	SOE Workers	Collective Workers	Other Types of Ownership
1978	95.2	74.5	20.5	0.2
1979	100.0	76.9	22.7	0.4
1980	105.2	80.2	24.3	0.7
1981	110.5	83.7	25.7	1.1
1982	114.3	86.3	26.5	1.5
1983	117.5	87.7	27.4	2.4
1984	122.3	86.4	32.2	3.7
1985	128.1	90.0	33.2	4.9
1986	132.9	93.3	34.2	5.4
1987	137.8	96.5	34.9	6.4
1988	142.7	99.8	35.3	7.6
1989	143.9	101.1	35.0	7.8
1990	147.3	103.5	35.5	8.3
1991	152.6	106.6	36.3	9.7
1992	172.4	108.9	36.2	27.3
1993	175.9	109.2	33.9	32.8
1994	184.1	112.1	32.9	39.1
1995	190.9	112.6	31.5	46.9
1996	198.2	112.4	30.2	55.6
1997	202.1	110.4	28.8	62.8
1998	206.8	90.6	19.6	96.6
1999	210.1	85.7	17.1	107.3
2000	212.7	81.0	15.0	116.7
2001	239.4	76.4	12.9	150.1
2002	247.8	71.6	11.2	165.0
2003	256.4	68.8	10.0	177.6
2004	264.8	67.1	9.0	188.7

Data source: NBS (various years).

Table 9.3 Policies and Regulations on Rural Labor Mobility

Year	Policy Initiatives
1983	Document No.1 of the Central Committee of the Chinese Communist Party (CCCCP): encouraged the emergence of specialized households in nonagricultural activities, including long-distance transport and marketing of commodities; permitted co-operative ventures and employment of labor (Ash, 1988).
1984	"Report on Creating a New Situation in Commune and Brigade-run Enterprises" by the CCCCP and the State Council: outlined a new development strategy targeting industries as the focus for future rural development; absorbing rural labor was one of the main objectives (Findlay et al., 1994).
1985	Document No.1 of the CCCCP: permitted farmers to work and establish businesses in nearby towns, conditional on financial capability and own provision of food grain. This deregulation officially permitted labor mobility in rural regimes.
1985	State announcement: the change from mandatory production plans and procurement quotas to purchasing contracts negotiable between the state and farmers (Lin, 1992). Implementations varied across regions and over time.

Table 9.4 Real per Capita Income for Rural and Urban Residents (Units: nominal yuan per year; Ratio: rural=1)

Year	Urban Per Capita Income (1)	Rural Per Capita Income (2)	Ratio of Urban to Rural Income (3)
1978	454	134	3.4
1979	523	160	3.3
1980	560	190	3.0
1981	567	219	2.6
1982	597	261	2.3
1983	620	296	2.1
1984	690	330	2.1
1985	692	358	1.9
1986	784	360	2.2
1987	801	369	2.2
1988	783	370	2.1
1989	778	343	2.3
1990	855	374	2.3
1991	916	378	2.4
1992	989	399	2.5
1993	1073	413	2.6
1994	1133	443	2.6
1995	1179	487	2.4
1996	1217	551	2.2
1997	1252	584	2.1

Data source: NBS (various years) adjusted by methods described in Zhang *et al.* (1994) and sector-specific price deflators.

Notes

[1] This paper was initially prepared for the Conference on 'China's Market Reforms' organized by Stanford Center for International Development, Stanford University. Subsequently, it was revised to include the up-to-date literature and anlaysis on recent changes in China's labor markets. We would like to thank Nicholas Hope, John Pencavel, Xiaojun Wang and the participants at the Stanford Conference as well as the Chinese Economists Society meetings for valuable comments and suggestions on earlier versions of this paper. We are responsible for all remaining errors.

[2] The analysis of rural labor markets presented here draws heavily from Fleisher and Yang (2006). However, the current paper extends the coverage to urban labor markets and explores the implications of China's accession to the WTO for the labor force.

[3] The objective of this strategy was to achieve rapid industrialization by extracting agricultural surplus for capital accumulation in industries and for urban-based subsidies. See Knight and Song (1999) and Yang and Cai (2003) for up-to-date descriptions of the origin and evolution of China's rural-urban divide.

[4] Quota prices for grain, oil crops, cotton, sugar crops, and pork were increased by an average of 17.1 percent. In addition, the premium paid for above-quota sale of grain and oil crops was raised from 30 percent to 50 percent of the quota prices. For details of these price changes and agricultural price adjustments in the following years of reforms, see Sicular (1988).

[5] In 1978, the urban sector employed 95 million workers while the rural sector had a labor force of approximately 306 million. In contrast, the total value of fixed assets in the state-owned enterprises (primarily urban) counted for RMB 449 billion while the value of the fixed assets in agriculture was only about RMB 95 billion (NBS 1993; Perkins and Yusuf, 1984). These numbers indicate a capital/labor ratio of RMB 4,726 per urban worker and a ratio of RMB 310 per rural worker. The capital concentration in the urban sector is more than fifteen times that of the rural sector.

[6] In their study, white-collar jobs include professional, managerial and clerical employment, while blue-collar jobs include employment in wholesale trade, retail services, construction, production and other occupations. The percentage of rural migrants in white-collar jobs is 3.36, while the predicted value is 9.25; the corresponding percentages for urban residents are 36.69 and 14.49.

[7] See Yang and Cai (2003) for detailed descriptions for making these adjustments. Three specific points are worth noting: (1) the methods used for computing urban non-wage incomes are based on a study by researchers at the SSB (Zhang et al., 1994). The lack of information on non-wage incomes in recent years makes the period end in 1997. On the rural side, incomes include value of products for own consumption. (2) In absence of area-specific deflators, aggregate consumer price indices for rural and urban

sectors are applied to compute real incomes. (3) Per capita income differs from per worker earning. But because of limitations on data, we are not able to adjust for dependency ratios to compute per worker earning. Recent data (SSB, 2001) indicate that the number of dependants per rural laborer were 1.74, 1.64, 1.56 and 1.53 in years 1985, 1990, 1995 and 2000, which do not differ greatly from the comparable numbers of 1.81, 1.77, 1.73 and 1.86 for urban employee. Therefore the per capita income gap approximates sectoral per worker earning.

[8] See Yang and Cai (2003) for analysis of policy factors that may have influenced the changes in rural-urban disparity over time.

[9] These results are consistent with other empirical studies. See Nolan and White (1984) for estimates on output per worker in agriculture and state industries and Meng (2000) for productivity gap between rural agricultural and nonagricultural sectors.

[10] In principle, one could carry out similar exercises of computing marginal productivity of capital, comparing their magnitudes across the sectors, and inferring output gains from optimally reallocating capital. But for empirical analysis this approach is not feasible because in Chinese official statistics different measures of capital are used across the sectors---number of tractors is a common measure of capital in agriculture, while fixed asset is used for industry. They are not directly comparable. Consequently we focus the attention to the consequences of labor reallocation.

[11] As much as we would like to use more recent data for policy analysis, the choice of time period is constrained by multiple factors. Although the SSB has released input-output data for all three sectors since 1986, starting in 1993, the statistical yearbooks have changed the reports of several economic variables for rural enterprises, such as replacing gross sales information with value-added measures. Therefore, we conduct the policy experiment for 1992 because of the availability of parameter values from Yang and Zhou (1999) for that year and issues of data consistency.

[12] Interregional integration of these markets across provincial boundaries remains incomplete (Poncet 2003a).

[13] A quick Google search for two topics, ‘China exports apples,’ and ‘China’s dairy industry’ yields on the first pages of results alone, references to reputable sources that emphasize both the effects of increased domestic demand, increased import competition, and increased exports due to changing agriculture specialization.